

United States Patent Office.

CESARE OSMANI, OF TOLENTINO, ITALY.

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IMPROVEMENT IN TANNING HIDES AND SKINS.

The Schedule referred to in these Letters Patent and making part of the same.

To all to whom it may concern:

Be it known that I, CESARE OSMANI, of Tolentino, province of Macerata, in the Kingdom of Italy, a subject of the King of Italy, have invented or discovered new and useful "Improvements in Tanning Hides and Skins;" and I, the said CESARE OSMANI, do hereby declare the nature of the said invention, and in what manner the same is to be performed, to be particularly described and ascertained in by the following statement thereof; that is to say—

This invention has for its object improvements in tanning hides and skins.

After the hides or skins, as the case may be, have remained the usual period in lime, so as to enable the hair to be completely removed, as well as any particles of flesh still adhering, and the hides are completely purged and cleansed by the action of the lime, the first step in this new process is to fill a vat with sufficient water to cover the quantity of skins which it is intended to place therein. These are to be thrown in, one by one, and well spread out, each with the fleshy side upwards, and sprinkled with bran in the following proportions:

Light hides for uppers, each skin six ounces.

Calf-skins, each, three ounces.

Sheep-skins, each, two and one quarter ounces.

Heavy hides, for sole-leather, each, fourteen ounces.

In this vat the skins must remain until fermentation has taken place, which will be in about two days in warm weather, and a little longer in cold weather, and after this the skins must be removed, and carefully scraped on both sides, so that they may be perfectly freed from any adhering particles of lime or other substances. When this has been done, the skins are subjected to the action of mustard-seed, which forms the distinguishing feature in this new process. It is carried out as follows:

A vat of proportionate size is filled with a sufficiency of water to cover the skins which are to be placed therein, and to this water there must be added for every hundred pounds' weight of the skins when dry, five pounds of ground Italian mustard-seed and five pounds of barley-meal. When these ingredients have been thoroughly mixed with the water, the skins must be dipped therein, so that they may be perfectly saturated with it, and they must be left in this dip for the following length of time:

Calf, sheep, or goat-skins, twenty-four hours.

Light hides and kips, thirty-six hours.

Heavy hides, for sole-leather, forty-eight hours.

When this time has expired the skins must be taken out of the vat and hung up to dry, but only partially, as when subjected to the next process they should still be in a damp condition.

The dip which has just been described has a very powerful action on the skins. The combined action of the mustard-seed, barley-meal, and heat thereby gene-

rated, is to open the pores of the skins, and thus render the remaining processes in tanning them by means of bark, &c., much more speedy than under any other methods hitherto known.

I would remark that although I have stated the exact manner in which it is preferred to prepare the skins for the mustard-bath, and also the exact composition of the mustard-bath itself, and the time during which it is preferred to subject the several varieties of skins to its action, I do not confine myself thereto, as these may be varied. Other mustard-seed, or oil of mustard-seed might also be employed in place of Italian mustard-seed.

So far the process hitherto described is suited to all descriptions of skins.

I will now describe the manner in which it is preferred subsequently to treat each separate kind. This subsequent treatment may, however, be considerably varied, and other tanning-materials may be employed in place of the tanning-materials mentioned.

First, light hides and kips are tanned by undergoing three baths in water charged with powdered oak-bark. In each of these three baths the skins must remain eight days. As before mentioned, the skins must be taken, while still damp from the effects of the mustard dip, and placed in a suitable vat with sufficient water to cover them, charged with oak-bark in the proportion of two hundred pounds of bark to every hundred pounds of dry hides. The second and third baths are to be mixed in the same proportions. It is necessary to observe that the hides must be moved twice a day, in order to change the points of contact between them, and during the second and third baths the bark must also be taken out, and replaced by degrees, when the skins are put into the vat again. When mechanical appliances are used by which the hides are kept in motion while in the tan-water, only two baths, of eight days each, are required, as the bark acts more speedily on the leather. By the method just described, light hides and kips are perfectly tanned in from sixteen to twenty-four days after they have passed into the tan-vats, and it only remains to grease and finish them according to the methods employed by tanners in general.

Second, calf-skins are tanned in the foregoing manner also, with this exception, that only two baths, of eight days each, in tan-water, are required. The same quantity of oak-bark must, however, be applied to these two baths as would be required for three in the proportion previously described. Sixteen days are thus required for tanning calf-skins, after which they are to be finished in the usual manner.

Third, sheep-skins are to be treated in the same manner, but only one bath is requisite in water charged with oak-bark in the proportion of three pounds twelve ounces of bark to each skin. In eight days sheep-skins are thus completely tanned, and have to be finished as usual.

Fourth, heavy hides, for sole-leather, owing to their thickness, are the most difficult of all kinds of skins to tan well. The following directions must be followed out: The hides must be subjected to three baths, of eight days each, must then be placed in a tan-pit for eighteen days, and finally, when taken out of this, placed in another tan-pit for forty days. The first bath must be charged with two and one-fifth pounds of oak-bark to a corresponding weight of hides when dry. The second bath must be charged with two pounds of oak-bark and twelve ounces of pulverized pine-bark to every two and one-fifth pounds of hides, as before. The third bath must be charged with one pound eight ounces of oak-bark and one pound four ounces of pine-bark to every two and one-fifth pounds of hides, as before. Each of these three baths is to last eight days, during which it is necessary to move the hides frequently, in order to change the points of contact between them, and after this the hides are transferred to a tan-pit and carefully spread out. Tan-water is applied to them, charged with twelve ounces of fine and good valonia to every two and one-fifth pounds of hides, as before. This mixture is to be rather thick, and must be applied to every stratum of hides superficially. After remaining eighteen days in this tan-pit,

the hides must be taken out, washed in the tan-water, and then spread out in the second tan-pit, between layers of powdered valonia, in the proportion of twelve ounces of valonia to every two and one-fifth pounds of hides, as before. After remaining forty days in this second tan-pit, the hides will be perfectly tanned, and will turn out compact and of a clear color. The time employed is eighty-two days in tanning heavy hides, after which they have only to be finished according to the methods common to all tanners. If baths of stronger tanning-material be employed, the time occupied by the tanning-process would be proportionably less.

What I claim, is—

The subjecting hides and skins to the action of a bath of mustard-seed or oil of mustard, substantially as herein described, to open the pores of the skins, and thus render the process of tanning them by bark or other tanning-material much more speedy than has heretofore been practicable.

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